

**Harroweria gloriosa** Hebard, a Katydid Stowaway from  
Panama (Orthoptera: Tettigoniidae)

BY O. H. SWEZEY

(Presented at the meeting of December 7, 1933)

On March 20, 1933, three very peculiar young grasshopper-like insects were found by Dr. H. L. Lyon in his orchid greenhouse in Honolulu, where they had evidently recently hatched from eggs, which, under the circumstances, undoubtedly must have been in or associated with some one of the numerous orchids. Search near where these young insects were found revealed a leaf on a plant of *Oncidium stipitatum* containing obscure punctures from which evidently these insects had hatched. There were about a dozen of the punctures, placed about an inch apart in the elongate fleshy leaf, and each puncture apparently contained two eggs. This leaf was cut off and placed in an appropriate container in the quarantine room of the Experiment Station, H.S.P.A., to observe further hatching, if any.

The young nymphs were also retained in the same quarantine room for experiments on feeding habits, and possible rearing to maturity for determining the identity of the strange insects, as they were different from anything known to the entomologists. After trying them with orchid flowers and several other things, it was found that they ate canna flowers very readily, and so these were used for their sustenance till they reached maturity. Among the flowers which they ate readily were: canna, hibiscus, hollyhock, dahlia and *Datura arborea*. They did not eat orchid flowers, nor the leaves of canna, sugar cane or "ti" (*Cordyline terminalis*).

From the orchid leaf containing the eggs hatching took place as follows:

March 20, 3 hatched			April 3, 5 hatched		
"	23, 1	"	"	4, 1	"
"	24, 1	"	"	5, 2	"
"	25, 3	"	"	7, 1	"
"	26, 6	"	"	13, 1	"
"	28, 1	"	<hr/> Total 28		
"	29, 1	"			
"	31, 2	"			

The times of molting were not accurately kept; but the first molt occurred April 3; 2nd molt not recorded; 3rd molt April 24; 4th molt April 29; 5th molt May 9; 6th molt not recorded; 7th molt (adult) May 26. This would indicate that it took about two months to mature from the time of hatching. But there is no certainty that the first to mature were the ones that hatched first, for an occasional nymph died, and others of the several instars were killed for preservation. At the 5th molt, 4 nymphs showed ovipositors for the first time. Fourteen were carried through to maturity, maturing on the following dates:

May 26, 3 males
May 27, 2 males
May 30, 2 males
June 2, 2 males; 2 females
June 3, 1 male
June 6, 1 female
July 2, 1 female
<hr/> 10 males; 4 females

Adult specimens were submitted to Mr. Morgan Hebard\* at the Academy of Natural Sciences, Philadelphia, Pennsylvania, who recognized the species as *Harroweria gloriosa*, which was described by him in 1927 (Trans. Amer. Ent. Soc., 53, p. 89, pl. 18, fig. 2) from a single female specimen collected at Gatun, Canal Zone, Panama, Aug., 1916, by Mr. D. C. Harrower, "flying in the dark recesses of a heavy forest." This is the first record of it since, and the first that is known of its habits.

Tracing the history of the orchid plant which contained the eggs of this katydid, it was shipped from Panama, Sept. 9, 1932. The eggs must have been deposited in the orchid leaf before that date; hence, about 7 months must have intervened between oviposition and hatching. There apparently was no connection of the insect with the orchid plant except as a convenient place for inserting its eggs. It need not be classed as an orchid insect unless further evidence is obtained in the future.

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\* From specimens sent from Honolulu, Mr. Hebard has now described the male, pointing out the distinctions between the sexes particularly in the coloration of tegmen and wings. (Entomological News, XLV, pp. 13-14, 1934).

This occurrence indicates the possibilities of insects smuggling their way into new regions in imported orchid plants, and shows the necessity of precautions when such importations are made. Furthermore, since the above orchid was vacuum-fumigated with hydrocyanic gas on arrival in Honolulu, this incident demonstrates the uncertainty of such fumigation as a safeguard against undesirable insects gaining admission in imported plants. If the above orchid had been planted in the open instead of being retained in a carefully watched greenhouse, these young katydids might have hatched and escaped being noticed, with the likelihood that they might have become established in Honolulu, and thus been another addition to our list of recent immigrant insects,\*\* and in such an instance it would never have been known how this insect gained entrance.

This katydid might not have been of particular importance even if established, but the fact that the nymphs were reared to maturity on canna flowers and that they ate other flowers also classes it as an undesirable insect in spite of its colorful attractions. We have already two species of katydids with flower-eating habits: *Elimaca punctifera* (Walker) and *Holochlora japonica* (Brunner), which cause considerable annoyance in flower gardens.

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\*\* In each issue of the Proceedings of the Hawaiian Entomological Society is printed a list of the immigrant insects first appearing or being first recorded that year.